

CURRENT LITERATURE.

The Seaweeds.

So large a part of our courses in general morphology has to do with the algæ that any handy text concerning them is welcome. The ordinary list of "types" has become somewhat stereotyped in text and illustration, and information concerning a broader range of forms would be very useful to such teachers as are not specializing in the group. Mr. George Murray's new book¹ is designed to fill such a place and should be very helpful. A full introduction gives a historical sketch of our knowledge of the group, the division on the basis of color and the relation of colors to distribution in depth, the relation of light and temperature to distribution, agents of distribution, comparison of the floras of different oceans, littoral and pelagic floras and their relation to the sustenance of marine animals, distribution in time, directions for collection, etc. A rather full bibliography is also a very useful feature. Although this is an "introduction" to the study of algæ, it is evident that the student must bring to it a general knowledge of the morphology and terminology of the group. A curious sequence is used, which is said to be for convenience. The *Phaeophyceæ* are first considered; then the *Chlorophyceæ* and *Diatomaceæ*; then the *Rhodophyceæ*; and finally the *Cyanophyceæ*. The account of the *Rhodophyceæ* is based upon the papers of F. Schmitz, and differs from the ordinary classification. As a rule, the illustrations are clear, and many of them are new; while the eight colored plates give a fairly good idea of the coloration. The title "seaweeds" is to be taken literally, for marine forms are chiefly considered, those of the fresh water being referred to only incidentally. The work will prove useful as a reference book in our laboratories, furnishing collateral reading and new illustrations.

Sand Hills of Nebraska.

In changing the plan of its field work the Division of Botany has wisely selected for study certain peculiar regions which may yield definite results to a biological survey in comparatively brief time and at small expense. Mr. Rydberg's work¹ in the "sand hills" region of Nebraska is a good illustration. This region extends over a wide area

¹ MURRAY, GEORGE.—An introduction to the study of seaweeds. Small 8vo. pp. vii+271. col. pl. 8. figs. 88. London and New York: Macmillan & Co. 1895. \$1.75.

in the western part of the state, in fact, its eastern limit reaches the center of the state. The "sand hills" change their configuration constantly, and where not held by roots the sand is gradually carried away by the wind, often transforming bared spots into "blowouts." There are four notable "blowout" grasses, which serve to give such stability as there is to the shifting sands, viz: *Calamovilfa longifolia*, *Redfieldia flexuosa*, *Eragrostis tenuis*, and *Muhlenbergia pungens*. In addition to these species, Mr. Rydberg gives a list of about twenty-five others most characteristic. The survey was practically confined to two counties in the heart of the sand hills. The catalogue of species collected is a long one, and contains many interesting notes and critical remarks. There are also descriptions of new varieties, and a new species of *Carduus* is illustrated by a plate.

The economic possibilities of the region are also considered, and in Mr. Rydberg's judgment the only agricultural hope for this region, as well as the neighboring regions which it helps keep dry, is a covering of forest vegetation, which he believes may be possible.

Minor Notices.

VOLUME II of the *Proceedings* of the Iowa Academy of Sciences covering the meeting in 1894 is the first to be published by the state, and it makes a most creditable showing. It contains 225 pages and 22 plates, well printed and in convenient form. The matter is interesting and valuable. It includes seven papers upon botanical subjects: Effects of heat on the germination of corn and smut, F. C. Stewart; Distribution of some weeds in the United States, L. H. Pammel; Structure of the seed-coats of Polygonaceæ, Emma Serrine; Lichens collected by Dr. C. C. Parry in Wisconsin and Minnesota in 1848, B. Fink; Pollination of cucurbits, L. H. Pammel and Alice M. Beach; and Diseases of plants at Ames, 1894, L. H. Pammel.

¹ RYDBERG, P. A.—Flora of the sand hills of Nebraska. Contributions from the U. S. Nat. Herbarium. 3: 133-203. 14 S. 1895.